

PHYSIOLOGY AND ALCOHOL.

Elementary Physiology and Hygiene. By Prof. Buel P. Colton, M.A. Heath's Modern Science Series. Pp. viii+317. (London: D. C. Heath and Co.) Price 2s. 6d.

THIS book has obviously been written to supply the wants of the American schoolchild, and consequently

"the subject of *alcohol* has been treated very thoroughly and in full compliance with the laws of the various States."

"Throughout the book the effects of alcohol and other narcotics have been discussed in close connection with the accounts of the functions of the body."

"A number of authoritative quotations have been made, so that the pupil may know that the statements made are supported by the most eminent authorities of the world on these subjects."

The above quotations from the author's preface show that it has been a pleasure to him to comply in his book with the law enjoining that all text-books of physiology used in American State schools must contain a description of the effects of alcohol upon the body.

So thoroughly has this instruction been carried out that it appears on reading the book as if in many cases the very brief descriptions of the physiology of the different tissues had been written chiefly as introductions in order to make clear the dire effects of alcohol, which are subsequently described in each case.

There is a denunciation of alcohol in every chapter, and its ill effects upon every tissue in the body, from the bones to the brain, through the whole gamut of the muscles, blood, circulation, respiration, digestion and excretion, are specially described in words usually chosen from well-known authors; and then, as if feeling that this alone were not sufficient, the author adds a chapter, written in great part by himself, dealing entirely with alcohol and its disastrous effects upon the body.

Truly this book must be appalling reading to the American schoolchild whose parents may be in the habit of making even moderate use of alcoholic drinks, until time has eventually brought the convincing comfort that the parents do not suffer so badly as might have been expected from the descriptions of the text-book.

It is a pity that the picture is so overdrawn, both for the sake of the effect upon the mind of the child and the valuable reformation of the parent which might have been effected through the child.

It is most desirable that every adult in every country should know the evil results upon the system of over-indulgence in such a powerful drug as alcohol, but it is highly questionable whether any good result can follow the drawing of such lurid pictures as are found here for the perusal of boys and girls at school.

The style of the book is not beautified by the use of the English instead of the Latin plural, so producing such monstrosities as *pleuras*, *ganglions*, *ciliums*, *villuses*, and *papillas*. The author states that this has been done to avoid puzzling the student who

has not "had Latin," appearing to forget that such words have become part of the language, and that it is a drastic procedure to coin many new and uncouth words to save his readers the labour of acquiring a knowledge of the Latin plural forms. This knowledge they ought already to possess at school before they have reached the stage of studying physiology and hygiene, unless school work is becoming very inverted and chaotic.

In addition to inventing new plurals, the author in his preface admits the manufacture of new words, again on the plea of simplicity, and further examples of this practice are to be found in the text, such as *aur-vent* and *vent-art* valves on p. 52.

The book contains a smattering of popular physiology and a very small amount of elementary hygiene, but it appears to the reviewer to be a volume which ought specially to attract temperance lecturers in search of "material" for their discourses.

BENJAMIN MOORE.

A BOOK OF ENGLISH SPORTS.

English Sport. Edited by A. E. T. Watson. Pp. ix+361; illustrated. (London: Macmillan and Co., Ltd., 1903.) Price 12s. 6d. net.

IN this handsome volume, illustrated by a large number of exquisite coloured plates (many of which are photographs), the editor has managed to compress into a comparatively small size an interesting and accurate account of all the chief English sports. All the articles, each of which is written by a recognised authority on his special subject, have previously appeared in the *Badminton Magazine*, but since the series was compiled with a view to subsequent republication in book form, there is not that lack of connection and completeness—to say nothing of overlapping—which is sometimes noticeable in collections of this nature. To particularise the names of the different contributors would be unnecessary on the present occasion, but a glance at the table of contents will be sufficient to convince the reader that the editor has been especially fortunate in obtaining the cooperation of such a number of names well known in the sporting world.

To review in detail a work of this nature comes more within the province of journals devoted specially to field and other sports, and we shall therefore, while commending the volume to the best attention of those whom it more immediately concerns, content ourselves with a few brief references to points more or less intimately connected with natural history.

All lovers of British animals cannot fail to find much matter of interest in the article by Viscount Ebrington on hunting the wild red deer in Devon and Somerset, of which his lordship, in his capacity as master of the hunt, probably knows more than any man living. Those who read this article must be convinced what an excellent lesson in "nature teaching" is afforded by the cultivation of the power of minute observation essential on the part of all those concerned in discovering the whereabouts of the quarry. In the article on harriers ancient and modern by the late Earl of

Suffolk and Berkshire, reference is made to the now almost forgotten fact that no later than the first half of the last century many of these hounds—and we presume fox-hounds also—were whole-coloured, instead of being of the tripartite “hound-colour” with which we are now familiar. Reddish was the prevalent tint, with a tinge of brownish-grey along the back, so that the hound was very similar in colour to the hare of which it was in pursuit. This, of course, has an important bearing on the ancestral stock from which our modern hounds are derived, and tends to confirm the view of Bell as to the derivation of these animals from a bloodhound stock.

As the editor admits in his preface, some objection might legitimately be raised to the inclusion in the volume of an article by Lord Delamere on lion-shooting in East Africa, and of another by Lord Walsingham on Spanish ibex hunting, since if these are admitted it is somewhat difficult to see why big game shooting in general was not included. Taking, however, the facts as they are, we find some very interesting points in Lord Delamere’s narrative—notably the statement that wart-hogs, when chased by lions to the deserted aard-vark holes, in which they often take up their abode, invariably enter backwards, so as to present their formidable tusks to an assailant. In the course of his account of a hunting trip to the haunts of the Spanish ibex, or wild goat, Lord Walsingham records many interesting points in connection with the fauna and flora of the districts traversed.

With this we take leave of an attractive volume which ought to occupy a handy position in the library of every British sportsman

R. L.

OUR BOOK SHELF.

Theoretical Mechanics. An Elementary Text-book. Second edition. By L. M. Hoskins. Pp. xi+456. (Published by the author, Stanford University, Cal., 1903.) Price 3 dollars.

We have here a very clear and lucid exposition of the fundamental principles of mechanics, presented always with incisive logic, in a simple manner, and enforced and illustrated at frequent intervals by well selected examples.

The book is divided into three parts, of which the first deals with statics, and includes a chapter on gravitation and the attraction of spherical shells. The second part is concerned with the dynamics of a particle, and part iii. treats of the motions of systems of material particles and of rigid bodies.

The subject is treated mainly by analytical methods, an elementary knowledge of the calculus being assumed. But the vector nature of the subject is always kept prominently to the fore, and the vector significance of the various terms in the dynamical equations is brought well home to the student by ample illustrations and descriptions. The book opens with a special chapter on vectors, and vector equations are freely employed throughout, verging sometimes on the use of vector products, as, for instance, when establishing the relations which exist amongst the various quantities in the case of the transformation of axes in the instructive chapter on relative motion which concludes the volume, and which has been added since the first edition.

Attention is mainly confined to motion of translation

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in space, and to the general case of plane motion, general motion in three dimensions being only casually alluded to. This seems to us a wise arrangement, as, in the space available, it allows the treatment to be very full and complete.

The C.G.S., the poundal-pound, and the “engineers’” systems of units are all clearly explained. The author, however, seems to be under some misapprehension as to the unit of force in the engineers’ system. He says this varies with the locality on account of the variation of gravitation, but that the system could be made dynamical by specifying the locality. In this country, at any rate, such specification is made, and the engineers’ system is thus as strictly absolute as the C.G.S. or the poundal-pound systems.

Considering the importance of harmonic motion in its many applications, as in electricity, in problems on balancing, in harmonic analysis, &c., many readers would have welcomed a special chapter devoted to the subject, including some reference to rotating vectors.

In a treatise like the present, it would seem highly desirable that a short account of the experimental verification of fundamental laws should be given, and the student be directed to carry out the experiments personally in the laboratory. But there is little room for adverse criticism in this most excellent text-book, which is one of the best on the subject that has recently appeared, and cannot fail to give satisfaction wherever used.

Atlas des Erdmagnetismus für die Epochen 1600, 1700, 1780, 1842 and 1915. By Dr. H. Fritsche, Director emeritus des K.R. Observatoriums in Peking. (Riga: Müllerschen Buchdruckerei, 1903.)

This work consists of a series of charts of equal lines of magnetic declination, inclination, and horizontal force for the five epochs 1600, 1700, 1780, 1842 and 1915, calculated by the author with the assistance of the Gaussian theory.

In his introduction he discredits the accuracy of the charts of the epochs hitherto published by Hansteen, van Bemmelen, Sabine and others as being the results of observation only, many of such observations being defective, and the lines drawn without the help of any theoretical groundwork. There is a mistake here as regards Sabine’s charts of the Arctic and Antarctic regions, as the Gaussian lines calculated for 1840 were largely used in their construction. Nevertheless, the author has spared no pains in his endeavour to replace what he condemns by something better, hence the present charts.

Considering the existing knowledge of terrestrial magnetism as regards the secular change of the magnetic elements, and our limited knowledge from observation of the conditions in the southern parts of the earth, the author appears to be somewhat premature in providing charts of inclination and force for the epochs 1600 and 1700, especially when so little was known of either element before the early years of the last century.

From the lengthened period during which the declination has been observed, the means exist for comparing the theoretical results of these calculated charts with good normal observations. Thus at Cape Town we find for the epochs 1842 and 1915 a difference in declination of $-1^{\circ}.5$ and $+2^{\circ}$ respectively, and at other well-known places similar differences.

Again, these charts indicate that the north magnetic pole moved in a south-easterly direction nearly 700 miles in the 315 years since 1600, some 93 miles of these being traversed between 1842 and 1915, whereas observations during the latter period indicate that the pole moved in a north-westerly direction. The south